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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,084	04/01/2004	Jesse Ambrosina	56231-459 (MKS-90CN)	9462
7590 09/28/2004 McDermott, Will & Emery 28 State Street Boston, MA 02109			EXAMINER KRISHNAMURTHY, RAMESH	
			ART UNIT 3753	PAPER NUMBER

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/816,084

Applicant(s)

AMBROSINA ET AL.

Examiner

Ramesh Krishnamurthy

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 10, 12, 13, 16 - 25, 27, 28 and 31 - 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 10, 12, 13, 16 - 25, 27, 28 and 31 - 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>04/01/04</u> . | 6) <input type="checkbox"/> Other: _____ |

This office action is responsive to communications filed 04/01/2004.

Claims 1 – 10, 12, 13, 16 – 25, 27, 28 and 31 – 34 are pending.

1. Claim 20 is objected to because of the following informalities: Claim 20 depends from claim 21. A claim cannot depend from a claim that follows it. Appropriate correction is required. In this office action, claim 20 is taken to depend from claim 17.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1 – 10, 12, 13, 16 – 25, 27, 28 and 31 – 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1 and 16 recite the limitation "wherein said calculation is made without reference to a measured flow through the inlet". This limitation is not disclosed in the disclosure as originally filed. Claims 31 – 34 recite limitation(s) that are not disclosed in the disclosure as originally filed.

This office action considers claims 1 and 16 without the added limitation "wherein said calculation is made without reference to a measured flow through the inlet". Claims 31 – 34 are not considered further in this office action.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 – 10, 12, 13, 16 – 25, 27, 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamagishi et al. (US 6,662,817).

It should be noted that in places below, Yamagishi et al. has been referred to as Yamagishi.

Yamagishi et al. discloses a system for dividing a single mass flow into two or more secondary flows of desired ratios comprising A) an inlet adapted to receive the single mass flow; (abstract) B) at least two secondary flow lines connected to the inlet, each flow line including (abstract), a flow meter measuring flow through the flow line and providing a signal indicative of the measured flow, and a valve controlling flow through the flow line based upon a signal indicative of desired flow rate (page 1 , section 0012)., C) user interface adapted to receive at least one desired ratio of flow (fig. 3, unit 35, 36, 37)., and D) a controller connected to the flow meters (fig. 3, unit 35,36,37) the valves (fig. 1, unit 10, 11, 41 , 8), and the user interface, and programmed to, receive the desired ratio of flow through the user interface (fig. 3, unit 35), receive the signals indicative of measured flow from the flow meters, calculate an actual ratio of flow through the flow lines based upon the measured flow (page 1, section 0012), compare the actual ratio to the desired ratio, calculate the desired flow through at least one of the flow lines if the actual ratio is unequal to the desired ratio (page 4, section

0055), and provide a signal indicative of the desired flow to at least one of the valves (page 1, section 0012-0017).

Regarding claim 16: Yamagishi discloses a method for dividing a single mass flow into two or more secondary mass flows of desired ratios (abstract) comprising A) dividing a single mass flow into at least two flow lines (fig. 2, unit 23); B) measuring mass flow through each flow line (fig. 1, unit 41, 9, 8, 11, 10); C) receiving at least one desired ratio of mass flow (page 4, unit 0055); D) calculating an actual ratio of mass flow through the flow lines based upon the measured flows (page 1, section 0012), E) calculating a desired flow through at least one of the flow lines if the actual ratio does not equal the desired ratio (page 2, section 0013); and F) regulating the flow line to the desired flow (page 1, section 0015-0016).

Regarding claims 3, 4, 5, 6, 8, 9, 10, 18, 19, 20, 22, 24: Yamagishi also discloses: A system wherein the flow lines comprise first and second flow lines (fig. 1, unit 41, 9, 8, 11, 10); and the controller is programmed to, provide a signal to the valve of the first flow line indicative of a first desired flow (fig. 2, unit 26, 27, 25), calculate a second desired flow if the actual ratio is unequal to the desired ratio (page 1, section 0012), and provide a signal to the valve of the second flow line indicative of the second desired flow (page 4, section 0055). A system wherein the first desired flow causes the valve of the first line to fully open (page 3, section 0045). A system wherein the ratio of flow is equal to the flow through the second flow line divided by the flow through the first flow line (page 4, section 0055). A system wherein the ratio of flow is equal to the flow through the second flow line divided by the flow through the first flow line (page 4,

section 0055, fig. 2, section 23, 29, 28). A system wherein an allowable range for the desired ratio of flow is between about 1 and about 10 (page 4, section 0055).

Regarding claim 7: Yamagishi also discloses: A system wherein: the flow lines comprise first, second and third flow lines; the user interface is adapted to receive a desired ratio of flow for the second and the first flow lines (fig. 1, unit 40, 9, 8) and a desired ratio of flow for the third and the first flow lines (fig. 1, unit 11, 10); and the controller is programmed to (fig. 2, unit 25), provide a signal to the first valve indicative of a first desired flow (fig. 1, unit 25), receive the desired ratios of flow through the user interface (page 4, section 0055), receive the signals indicative of measured flow from the flow meters (page 4, section 0055), calculate an actual ratio of flow for the second and the first flow lines based upon the measured flows through the second and the first flow lines (page 4, section 0055), calculate a second desired flow if the actual ratio for the second and the first flow lines is unequal to the desired ratio for the second and the first flow lines (page 4, section 0055), provide a signal to the valve of the second flow line indicative of the second desired flow, calculate an actual ratio of flow for the third and the first flow lines based upon the measured flows through the third and the first flow lines (page 4, section 0055), calculate a third desired flow if the actual ratio for the third and the first flow lines is unequal to the desired ratio for the third and the first flow lines, and provide a signal to the valve of the third flow line indicative of the third desired flow (page 1, section 0012-0016).

Regarding claims 12, 13, 27, 28: Yamagishi also discloses'. A system further comprising a pressure sensor measuring pressure in one of the inlet and the secondary

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flow lines, and connected to the controller to provide the pressure measurement to the controller (page 1, section 0018, page 2, 0020, fig. 3, unit 35). A system wherein the pressure sensor measures pressure in the inlet t5g. 1, unit 41, (page 1, section 0018, page 2, 0020) secondary flow lines (fig. 1, unit 11, 10). Regarding claim 17: Yamagishi also discloses: A method according to claim 16, wherein the single mass flow is divided into first and second flow lines (fig. 1, unit 8, 8), the first flow line is regulated to a first desired flow; a second desired flow is calculated using the desired ratio and the first desired flow if the actual ratio is unequal to the desired ratio; and the second flow line is regulated to the second desired flow (fig. 3, unit 35, page 4, section 0055). Regarding claims 21, 23: Yamagishi also discloses: A method wherein the single mass flow is divided into first, second and third flow lines; first and second desired ratios of mass flow are received; the first flow line is regulated to a first desired flow (page 4, section 0055, fig. 1, unit 9, 8, 11, 10); a second desired flow is calculated using the first desired ratio and the first desired flow if the actual ratio of the first and the second flow lines is unequal to the desired first ratio (page 4, section 0055, fig. 3, unit 35)., the second flow line is regulated to the second desired flow; a third desired flow is calculated using the second desired ratio and the first desired flow if the actual ratio of the first and the third flow lines is unequal to the desired second ratio; and the third flow line is regulated to the third desired flow (page 1, section 001 1-0016, fig. 3, unit 35). A method wherein the ratios of flow of the first and the second flow lines are equal to the flow through the second flow line divided by the flow through the first flow line (page 4, section 0055, fig. 1, unit 41, 9, 8, 11, 10, fig. 3, unit 35), and the ratios of flow of the first and the third flow

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lines are equal to the flow through the third flow line divided by the flow through the first flow line (page 4, section 0055, fig. 1, unit 41, 9, 8, 11, 10, fig. 3, unit 35).

As for claims 2 and 25, the flow meter disclosed in Yamagishi et al. is taken here to include all known flow meter including those of thermal-based flow meter such being conventional to the art.

Regarding claims 31 – 34, it is noted that as pointed out earlier, the disclosure as filed originally lacks support for the limitations in these claims. However, it is further noted that they are rejectable as being obvious over Yamgishi et al. as applied to claims above in view of Vyers (US 6,389,364). See Fig. 3 in Vyers.

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1 and 2 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,766,260. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 in the '260 patent is readable on the limitation of claims 1

and 2 in the instant patent while additionally reciting limitation pertaining the characterization of the desired flow.

8. Claims 12 and 13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,766,260. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 2 in the '260 patent is readable on the limitation of claims 1 and 2 in the instant patent while additionally reciting limitation pertaining the characterization of the desired flow.

9. Claims 16, 27 and 28 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,766,260. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 6 in the '260 patent is readable on the limitation of claims 16, 27 and 28 in the instant patent while additionally reciting limitation pertaining the characterization of the desired flow.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Response to Arguments

11. Applicant's arguments filed 04/01/04 have been fully considered but they are not persuasive. Applicant is arguing that "as currently amended, the actual ratio of flow through the flow lines is calculated without reference to a measured flow through the inlet. In other words, the system claimed does not include or require a mass flow meter (MFM) in the inlet". Examiner's opinion is that while the disclosed system/method in the

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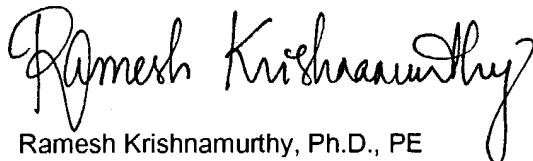
instant application may not include a flow meter in the inlet, the limitation "without reference to a measured flow through the inlet" does not necessarily imply that.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramesh Krishnamurthy whose telephone number is (703) 305 - 5295. The examiner can normally be reached on Monday - Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Scherbel, can be reached on (703) 308 - 1272. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 - 9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 - 0861.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ramesh Krishnamurthy, Ph.D., PE
Primary Examiner
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